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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,906	06/25/2003	Moon-Suk Suh	16783	4890

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EXAMINER	
HAMLIN, DERRICK G	
ART UNIT	PAPER NUMBER
1751	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,906

Applicant(s)

SUH ET AL.

Examiner

Derrick G. Hamlin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-13 and 15 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Status of Claims

Claims 1-13 and 15 are currently pending.

The rejection of claims 1-13 and 15 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. US 6,635,189, is withdrawn in view of the applicant's amendment.

The rejection of claims 1, 4, 7, 10 and 13 under 35 U.S.C. 102(b) as being anticipated by Durfee et al (US 5,480,573), is withdrawn in view of the applicant's amendment.

The rejection of claims 2, 3, 5, 6, 8, 9, 11, and 12-14 under 35 U.S.C. 103(a) as being unpatentable over Durfee et al (US 5,480,573), is withdrawn in view of the applicant's amendment.

Claim 14 has been cancelled.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

New Grounds for Rejection

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Claims 1-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durfee et al (US 5,480,573), further in view of Carlson (5,032,307), and further in view of Winslow (US 3,407,507) or Goossens (US 4,645,614).

In claims 1 and 9, Durfee discloses an electro-rheological fluid composition comprising: (A) solid particles having a specific gravity of less than 1.8; (B) an alkylmethylsiloxane compound; and (C) an organofluoro compound, wherein the solid particles (A) are selected from the group consisting of acid group-containing polymers, silica gel, may be starch, wherein the base fluid is a mixture of (B) and (C). (col. 13, lines 50-55 and col. 14, lines 29, 66) The reference further discloses that in order for an ER effect to be exhibited using acid group-containing polymers as the disperse phase, it is necessary for a small amount of water to be present in the ER fluid as is well known to those skilled in this art. (col. 5, lines 4-7) Additionally, the reference teaches that surfactants may be used in ER fluids. (col. 2, lines 18-26) The plurality of solid particles has an average particle size of from 1 to 50 microns and the electrically non-conducting liquid contains from 20% to 40% by volume of the solid particles. (col. 15, lines 17-22) Durfee fails to teach the use of a nonionic surfactant and the specific amount.

Although, Durfee fails to teach the use of a nonionic surfactant and the specific amount, it cites Carlson as a significant teaching of an ER fluid containing a carrier fluid, activator and an anionic surfactant. (col. 2, lines 16-20) Carlson is relied on for its teaching in analogous art that additional surfactants that are non-ionic may be used, such as those in Goossens and Winslow which is incorporated by reference. (col. 6,

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lines 30-40) One would be motivated to combine Goossens or Winslow as they are incorporated by reference.

Goossens is relied on for its teaching in analogous art that the surfactants that are non-ionic may be sorbitan monooleate. (col. 7, line 18)

Winslow is relied on for its teaching in analogous art that the surfactants that are non-ionic may be sorbitan monooleate, nonyl phenol reacted with ethylene oxide and polyoxyethylene alkyl aryl ethers, such as span 80. (col. 8, line 58-59 and col. 9, lines 24-40) Winslow teaches that it is well known in the art that the amount of surfactant increases with the porosity of the particles. (col. 8, line 69-70) It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the instantly claimed amount of surfactant, since it has been held that discovering an optimum value of a result effective variable involves only routine^e skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CPA 1980).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the instantly claimed amount of surfactant, since it has been held that discovering an optimum value of a result effective variable involves only routine^e skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CPA 1980).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to create an electro-rheological (ER) fluid comprising a water soluble starch as a conductive particle disposed in non-conductive media, water and a nonionic surfactant.

In view of the forgoing, the above claims have failed to be patently distinguishable over prior art.

The remaining references listed on form(s) 892 and/or 1449 have been reviewed by the examiner and are considered to be cumulative to or less material than the prior art references relied upon in the rejection above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick G. Hamlin whose telephone number is (571)

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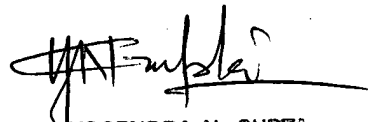
272-1317. The examiner can normally be reached on Monday-Fridays from ~8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta, can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick G. Hamlin

4/4/05



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